Sub Code:MBTM015/NMBA015

Paper Id: 270140 Roll No: | | | | | | | | | | | | |

MBA

(SEM I) THEORY EXAMINATION 2019-20

BUSINESS STATISTICS

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. What are Measures of Central Tendency?
b. What is Coefficient of Variation?
c. What is Historical Series?
d. What is Method of Least Square?
e. What is Index Number?
f. What is Regression Analysis?
g. What is Probability?
h. What is Baye's Theorem?
i. What is F-test?
j. What is Z-test?

SECTION B

2. Attempt any *three* of the following: 10x3=30

a. What is meant by Measures of Dispersion? Discuss the various measurements of Dispersion.
b. Explain the Additive and Multiplicative model of Time Series and also discuss the various components of Time Series.
c. What are the types of Index Numbers? Discuss the uses of Index Numbers.
d. What is meant by Binomial Distribution? Discuss the characteristics of Binomial Distribution.
e. Define Association of Attributes. How would you measure it?

SECTION C

3. Attempt any *one* part of the following: 10x1=10

a. Calculate the S.D. and its coefficient from the following data:

Marks :	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency :	6	8	15	7	3	0	1

b. What is Kurtosis? How is it measures? What purpose does it serve?

4. Attempt any *one* part of the following: 10x1=10

a. Fit a least squares trend to the following data. Also estimate the value of sale for the year 2025:

Year :	2012	2013	2014	2015	2016	2017
Sales (Rs. Lakh) :	12	15	17	22	24	30

b. Discuss the applications of Time Series in Business Decision Making.

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5. Attempt any *one* part of the following: 10x1=10

a. Compute Laspeyre's, Pasche's, Fisher's index numbers from the following data:

Item	Base Year		Current Year	
	Price (Rs.)	Expenditure(Rs.)	Price (Rs.)	Expenditure(Rs.)
V_1	5	125	6	180
V_2	3	24	4	40
V_3	2	20	3	24
V_4	10	40	3	15

b. Explain the meaning and significance of correlation. Give the general rules for interpreting its coefficient.

6. Attempt any *one* part of the following: 10x1=10

a. A factory has two machines. Past records show that machine 1 produces 30% of the items of output and machine 2 produces 70% of the items. Further 5% of the items produced by machine 1 were defective and only 1% produced by machine 2 were defective. If a defective item is drawn at random. What is the probability that the defective item was produced by machine 1?

b. What is meant by Normal Distribution? Discuss the characteristics of Normal Distribution.

7. Attempt any *one* part of the following: 10x1=10

a. A random sample of 11 pairs of items from a normal population gives a coefficient of Correlation of +0·5. Is this value significant of the existence of correlation in the Universe? Use t-test. (Given : Critical value of t at 5% level of significance with 9 d.f. = 2·262)

b. By using χ^2 (Chi-square) test, find out whether there is any association between income level and type of schooling:

Income	Public School	Govt. School
Low	200	400
High	1000	400

Given: 5% value of χ^2 for 1 d.f. is 3·841.

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